

## **Title: Sweet Charity**

### **Brief Overview:**

Your class has been given the task of organizing a fund raising activity. You will conduct a survey, analyze the results and the proceeds will be donated among different charities. Since this is an extended fund raising activity, the teacher may want to take in to consideration: principal approval, time of year, and conflicts with other fund raising activities.

### **Link to Standards:**

- **Problem Solving** Students will demonstrate their ability to solve mathematical problems in a cooperative atmosphere by creating and conducting a survey, selling a product and calculating a profit.
- **Communication** Students will discuss and write about mathematics when justifying their profit calculations and charity allocations.
- **Reasoning** Students will demonstrate their ability to reason mathematically throughout the task. They must decide on a sales price, determine a profit, and justify their calculations.
- **Connections** Students will demonstrate their ability to connect Statistics and Algebra. Students will also connect Math and Language Arts through writing tasks.
- **Number & Number Relationships** Students will represent and use numbers in a variety of equivalent forms when calculating their profit and when determining the allocation of profits to charities.
- **Computation & Estimation** Students will apply estimation strategies when creating a survey, and determining a sales price. Students will apply basic computational skills throughout the task. Finally, students will solve problems involving money when completing the Profit Computation Table.
- **Statistics** Students will collect, analyze, interpret and display data on a graph. Based upon data collected, they will select the most profitable items to sell and compute percentages to be donated to charities.
- **Algebra** Students will demonstrate their ability to perform algebraic operations when solving simple equations and using a formula when completing the Profit Computation Chart. Students will describe how a change in selling price affects the profit.

### **Grade/Level:**

Grades 7-9

### **Duration/Length:**

This activity will take 5 days. The activities may take longer than anticipated depending on class duration and student's prior knowledge.

**Prerequisite Knowledge:**

Students should have working knowledge of the following skills:

- Estimating, rounding and place value
- Constructing line plots
- Changing a fraction to a percent
- Determining percentages
- Following a simple formula
- Collecting data
- Adding, subtracting, multiplying and dividing whole numbers, fractions and decimals
- Solving problems using money
- Using a calculator

**Objectives:**

Students will be able to:

- work cooperatively in groups.
- create a survey instrument and conduct a survey.
- collect, analyze and interpret data.
- graph data.
- determine the best sales price for a product.
- calculate the percentage donated to each charity.
- create an advertising slogan or jingle for their product.
- develop an understanding of profit.

**Materials/Resources/Printed Materials:**

- Pencils
- Paper
- Calculator
- Student worksheets 1-5

**Development/Procedures:**

- Brainstorm to create a list of charities and profits.
- Create a survey instrument on preferences of different food products and charities.
- Collect, tally, organize and graph data.
- Create an advertising slogan for a P.A. announcement.
- Sell the product.
- Complete Profit Computation Table.
- Allocate percentage of proceeds to charities based on preferences from survey instrument.
- Explain and justify calculations.

**Assessment:**

The assessments for this task are several rubrics which can be found in the Teacher Resource Section.

**Extension/Follow Up:**

- Students may sell product in a competitive atmosphere.
- Students may create pie graph showing allocation of percentages to charities.
- Students may design a method of record keeping.
- Students may create a spreadsheet to compute costs, expenses and profits.
- Students may predict how a change in one or more variables would affect the outcome.
- Students may use this activity to apply hours toward their Student Service Requirement.

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## **ASSESSMENT INSTRUMENTS**

### **Survey Instrument Rubric**

4 points	Directions are clear and easily understood. Writing is grammatically correct.
3 points	Two of these components are present.
2 points	One of these components is present.
1 point	Attempt made, none of the components are present.
0 points	No attempt made.

### **Class Frequency Tally Sheet Rubric**

3 points	All components are correct.
2 points	Components are partially correct.
1 point	Attempt made, components are incorrect.
0 points	No attempt made.

### **Charity Ranking Rubric**

3 points	All components are correct.
2 points	Components are partially correct.
1 point	Attempt made, components are incorrect.
0 points	No attempt made.

### **Determination of Unit Cost Rubric**

3 points	All components are correct.
2 points	Components are partially correct.
1 point	Attempt made, components are incorrect.
0 points	No attempt made.

### **Determination of Expenses Rubric**

3 points	All components are correct.
2 points	Components are partially correct.
1 point	Attempt made, components are incorrect.
0 points	No attempt made.

### **Calculation of Profit Rubric**

3 points	All components are correct.
2 points	Components are partially correct.
1 point	Attempt made, components are incorrect.
0 points	No attempt made.

### **Justification of Profit Rubric**

4 points	Detailed explanation showing mathematical understanding. At least two reasons justifying profit calculation.
3 points	Explanation lacks some detail, but shows mathematical understanding. At least one reason justifying profit calculation.
2 points	Explanation lacks clarity. Little justification for profit calculation.
1 point	Attempt made, however, shows lack of mathematical understanding. No justification for profit calculation.
0 points	No attempt made.

### **Allocation of Funds Rubric**

3 points	All components are correct.
2 points	Components are partially correct.
1 point	Attempt made, components are incorrect.
0 points	No attempt made.

## **Day 1 - Brainstorming and Constructing a survey instrument**

Class Activities:

A) Brainstorm and decide on 5 or less possible products to sell. (Use price reference sheet as a starting point.)

B) Brainstorm and decide on 3 Charities that you would wish to support.

C) Write clear concise directions so that someone filling out the survey will numerically rank the products from 1 to 5, and charities from 1 to 3.

D) Using the enclosed survey sheet, fill in your directions and list your products and charities.

\*\*\* HOMEWORK: Group Activity - It is now your task to survey at least 8 **different** students and record their preferences on the sheet. (Total population to be surveyed will be decided upon by the class.)

NOTE: You are required to total each row.

## **Day 2 - Analyzing data**

Class Activities:

A) Using the Class Frequency Tally Sheet, record totals from all survey sheets.

B) Display the product data on a graph.

Questions :

Looking at your data what product(s) do you think would be most profitable to sell?

Which product would be least profitable?

Explain how you arrived at your conclusions.

\*\*\* HOMEWORK: Individual Activity - Using the total charity data rank the charities. Using the Charity ranking sheet, compute and record the percentages that should be allocated to each charity. Analyze and explain your findings.

### **Day 3 - Marketing techniques**

Class or Group Activities:

A) Brainstorm and decide who will sell the product and where it will be sold. Appoint a treasurer to collect and record the daily receipts.

B) Complete the first 3 columns of the Profit Computation Table sheet from your price sheet references.

C) In column 4, compute and record the unit cost for each product that you will be selling.

D) In column 5, record the number of boxes that you will be purchasing.

Question:

How did you arrive at your decision?

D) In column 6, compute and record the total cost.

E) In column 7, decide and record the selling price.

Question:

How did you arrive at this price?

\*\*\* HOMEWORK: Individual Activity - Write a slogan, jingle or statement that could be used as advertisement for your product. Include: product, price, place and charity that you are promoting. As an alternative, posters could be constructed and strategically placed around the school.

Class or Group Activities:

### **Day 4 - Selling a product:**

A) Sell the product and record daily receipts.

### **Day 5 - Profit computation:**

Class or Group Activity:

A) In column 8 on the Profit Computation Table, record the number of units sold.

B) In column 9 on the Profit Computation Table, record the money collected.

C) In column 10 on the Profit Computation Table, compute and record the profit.



Question:

How did you compute the profit? Give at least two reasons to justify your calculations.

D) Using your charity ranking percentages and your total profit, calculate and record the actual funds to be allocated to each charity.

Question:

How did you determine the funds to be allocated to each charity?

## Price Sheet Reference List

### **LOLLIPOPS:**

Square Shooters - Assorted - 70.8 oz	120 per box	- \$6.99
Tootsie Pop - Assorted - 60 oz	100 per box	- \$5.89
Dum Dums - Assorted - 51 oz	300 per bag	- \$5.49
Blow Pops - 3 flavor types - 31.2 oz Blue Razz Berry Black Cherry Watermelon	48 per box	- \$3.19
Charms Pop - Assorted - 30 oz	48 per box	- \$3.19

### **FRUIT / HEALTH SNACKS:**

Assorted Trail Mix Snacks - 20 oz each	20 packs	\$6.39
Gushers Fruit Snack - .9 oz each	24 packs	\$5.99
String Thing Fruit - .7 oz each	24 packs	\$5.99
Fruit by the Foot - .75 oz each	24 packs	\$5.99
Fruit Roll-Up - .5 oz each	35 packs	\$5.99
Farley Fruit Snack - 2.5 oz each	18 packs	\$5.49
Farley Fruit Roll - 1.8 oz each	24 packs	\$5.29
Fruit Parade - 1 oz each	38 packs	\$4.89

## PRODUCT

## RANK VOTES

[illegible]

## CHARITY

## RANK VOTES

[illegible]

**Tally (Frequency)**

[illegible]

**Tally (Frequency)**

[illegible]

# of votes for each charity

\_\_\_\_\_

total # of votes recorded

= \_\_\_\_\_ % allocated to charity

### Charity

1. \_\_\_\_\_ = \_\_\_\_\_ %

2. \_\_\_\_\_ = \_\_\_\_\_ %

3. \_\_\_\_\_ = \_\_\_\_\_ %

TOTAL = \_\_\_\_\_ %

Analyze and explain your findings:

## Profit Computation Table

1	2	3	4	5	6	7	8	9	10
Product	Price/Box	Quantity/Box	Unit Cost (            )	Boxes Purchased	Total Cost (            )	Selling Price	Units Sold	Money Collected	Profit (            )

### Charity

1. \_\_\_\_\_ = \_\_\_\_\_ %

2. \_\_\_\_\_ = \_\_\_\_\_ %

3. \_\_\_\_\_ = \_\_\_\_\_ %

TOTAL = \_\_\_\_\_ %

### FUNDS ALLOCATED

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_